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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,178	01/15/2002	Jean-Paul Briand	110072	8029

7590 11/28/2006

Oliff & Berridge  
PO Box 19928  
Alexandria, VA 22320

EXAMINER

AUDET, MAURY A

ART UNIT PAPER NUMBER

1654

DATE MAILED: 11/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

*Supplemental*  
**Notice of Allowability**

Application No.

09/889,178

Examiner

Maury Audet

Applicant(s)

BRIAND ET AL.

Art Unit

1654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/01/2006.
2. ☒ The allowed claim(s) is/are 1-11, 14, 15 and 18.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

### **SUPPLEMENTAL EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. The amendment is simply to put the specification into proper grammatical form on pages 1-3. The present Examiner's Amendment and Reasons for Allowance replaces in its entirety the previous Reasons for Allowance.

Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Kristin Vidovich, Applicant's Representative, on 11/21/06.

#### IN THE SPECIFICATION

The following changes replace the former sections in their entirety and have been made in order to put the specification on pages 1-3 into proper grammatical form:

Page 1, paragraph beginning on line 26

In general, these peptide analogs, called pseudopeptides, have, as a first advantage, a metabolic stability which is greater than that of natural peptides or proteins because they are not degraded by natural proteases or are degraded less rapidly. Moreover, the conformational changes induced by these chemical modifications can improve the biological properties of these pseudopeptides, see for example the decapeptide analogs which are antagonists of the hypothalamic hormones and which are described in ~~WO-A-92/13883~~; WO-A-92/13883.

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Page 2, insert the following paragraph before the paragraph beginning on line 28

While the techniques for the synthesis of so-called natural peptides, in particular on solid supports, are well established and make it possible to easily prepare peptides comprising several tens of amino acids, the introduction of these modifications in order to prepare pseudopeptides renders the synthesis more complex, in particular for long pseudopeptides.

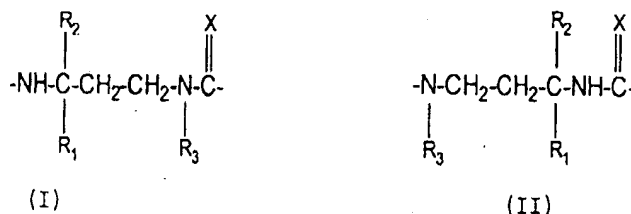
Page 2, paragraph beginning on line 28

Moreover, in the field of immunology and both in the diagnosis of viral or autoimmune diseases and in immunotherapy or vaccination, the synthetic peptides mimicking the epitopes of proteins represent a valuable alternative. The size of the peptides which are analogs of these antigenic determinants or epitopes is an important factor in the choice of these peptides and has been the subject of numerous publications (M.H.V. Regenmortel, Immunology Today, 10(8), p. 266-271, 1989 or M.H.V. Regenmortel, Biomedical Peptides, Proteins & Nucleic Acids, 1, p. 109-116, 1995). While originally it was accepted that an epitope comprises between 15 and 22 amino acids, recent studies show that this size may be reduced to a few amino acids. In the immunity domain, crystallographic studies on the interaction of peptides and the major histocompatibility complex (MHC) indicate a size of 9 to 13 amino acids for a good interaction with the MHC class I molecules and 9 to 25 for the MHC class II (H.G. Rammensee, Current Opinion in Biotechnology, 7, p. 85-96, 1995). Likewise, in diagnosis, the size is a critical factor for the use of peptides. In the case of HIV (human immunodeficiency virus), the smallest epitopes comprise from 4 to 6 amino acids but the peptides used still have a size greater than at least 12 amino acids (D. Osmanov, AIDS, 5(1), WHO1-WHO9, 1991). In another example, such as the diagnosis of Chagas' disease, the peptides used comprise a minimum of 12 amino acids (WO-A-97/18475). In (Bradshaw C.G. et al., J. Med. Chem., 37, 1991-1995, 1994), fluorescent probes which are analogs of the heptapeptide antagonist of NK<sub>2</sub> were obtained by substitution of an amino acid and coupling with a fluorophore.

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Page 3, paragraph beginning on line 1

It is the object of the present invention to describe a novel family of pseudopeptides comprising a novel carbaza unit significantly modifying the peptide backbone and whose use in the context of peptide synthesis is easy both in solid phase and in liquid phase, and this even for peptides of a large size and in particular greater than 6 amino acids. This novel family of pseudopeptides can be used in the diagnostic field to provide in vitro methods for the diagnosis of pathology conditions associated with the presence of endogenous or exogenous proteins in an individual, or in the therapeutic field, and in particular immunotherapy or vaccination. These pseudopeptides have a size of at least 6 amino acids comprising at least one unit chosen from the B units of general formula I and/or II defined below:



in which:

R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> each independently of one another represent an amino acids side chain and may be identical or different, and

X represents an oxygen or sulfur atom, preferably an oxygen atom.

Advantageously, R<sub>2</sub> represents a hydrogen atom.

The expression amino acids is understood to mean the primary amino acids which encode proteins, the amino acids derived after enzymatic action such as trans-4-hydroxyproline and the natural amino acids but which are not present in proteins, such as norvaline, N-methyl-L-leucine, staline (Hunt S. in Chemistry and Biochemistry of the amino acids, Barrett G.C., ed., Chapman and Hall, London, 1985), the amino acids protected by chemical functional groups which can be used in synthesis on solid supports or in liquid phase and the non-natural amino acids. Examples of these non-natural amino acids are given in the Novabiochem catalog (Catalog & Peptide

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synthesis Handbook; 1999; CH-4448, Läufelfingen, Switzerland) or the Néosystem catalog (Catalog 1997/1998; 67100 Strasbourg, France).

### ***REASONS FOR ALLOWANCE***

The following is an examiner's statement of reasons for allowance: The prior art of record does not reasonably teach or suggest a pseudopeptide of at least 6 amino acids comprising at least one independent B unit of formulae I and/or II, wherein the N-terminal of said unit is attached to the C-terminal of an amino acid or of a unit of said general formulae I or II and/or the C-terminal of said unit is attached to the N-terminal of an amino acid or of a unit of said general formula I or II.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Claims 1-11, 14-15, and 18 are allowed.

No claims are allowed.

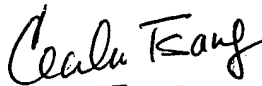
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maury Audet whose telephone number is 571-272-0960. The examiner can normally be reached on M-Th. 7AM-5:30PM (10 Hrs.).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MA 11/22/2006

  
Cecilia J. Tsang  
Supervisory Patent Examiner  
Technology Center 1600